NOTES ON THE BACTERIOLOGICAL EXAMINATION OF WATER FROM THE SYDNEY SUPPLY. No. III.

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During the time from 30th December, 1886, till 17th March, 1887, I was able to carry out seventeen bacteriological examinations of Sydney Water, which was in all the cases derived from the tap in the Laboratory of the Linnean Hall. The results of these different tests, as regards the quantity of bacteria in the water under consideration, can best be seen from the following table :—

Date.	Temp. of Water.	Number of colonies in 1 ccm.	Number of liquefying colonies in 1 ccm.
(1) Dec. 30, '86	76° F. = $24\frac{4}{9}$° C.	177	$62 = 35$ p.c.
(2) Jan. 4, '87	77 F. = 25 C.	32	$18 = 56\frac{1}{4}$ p.c.
(3) „ 10	79 F. = $26\frac{1}{9}$ C.	159	$88 = 55\frac{1}{3}$ p.c.
(4) „ 17	73 F. = $22\frac{7}{9}$ C.	9	$2 = 22\frac{2}{9}$ p.c.
(5) „ 20	74 F. = $23\frac{1}{3}$ C.	11	$5 = 45\frac{5}{11}$ p.c.
(6) „ 25	76 F. = $24\frac{4}{9}$ C.	31	$7 = 22\frac{3}{5}$ p.c.
(7) „ 31	79 F. = $26\frac{1}{9}$ C.	434	$212 = 48\frac{7}{10}$ p.c.
(8) Feb. 3	74 F. = $23\frac{1}{3}$ C.	26	$10 = 38\frac{6}{13}$ p.c.
(9) „ 8	74 F. = $23\frac{1}{3}$ C.	417	$194 = 46\frac{1}{2}$ p.c.
(10) „ 13	75 F. = $23\frac{8}{9}$ C.	195	$125 = 64\frac{1}{10}$ p.c.
(11) „ 18	73 F. = $22\frac{7}{9}$ C.	37	$8 = 21\frac{2}{3}$ p.c.
(12) „ 22	71·5F. = 22 C.	369	$172 = 46\frac{8}{13}$ p.c.
(13) „ 26	73·5F. = 23 C.	21	$6 = 28\frac{4}{7}$ p.c.
(14) Mar. 2	76 F. = $24\frac{4}{9}$ C.	164	$80 = 48\frac{4}{5}$ p.c.
(15) „ 7	75·5F. = $24\frac{1}{6}$ C.	188	$72 = 38\frac{2}{7}$ p.c.
(16) „ 11	76 F. = $24\frac{4}{9}$ C.	0	0
(17) „ 17	72·5F. = $22\frac{1}{2}$ C.	528	$204 = 38\frac{7}{11}$ p.c.

These data yield, for 1 ccm. of the water in question within the above period, an average number of 165 colonies, 76 of which (= 46 p.c.) caused liquefaction of the nutritive gelatine.

Especially prominent or, so far as known, pathogenic microbes did not come under notice, nor so far could experiments be made in order to ascertain which, if any, of the cultivated bacteria belong to the group of the so-called "water-bacteria," distinguished from others by their power of multiplying in water in which no traces of organic matter can chemically be found.

From the above it may be seen that the average number of bacterial colonies, namely 165, for the period stated, is by far lower than that obtained previously (cf. these Proceedings, 2nd series, Vol. I. 1886, pp. 913, 1205), and this is the more interesting as the temperatures of the water for that period were, of course, considerably higher than those noticed on former occasions (l.c.).